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Pure Milk and How to Get It

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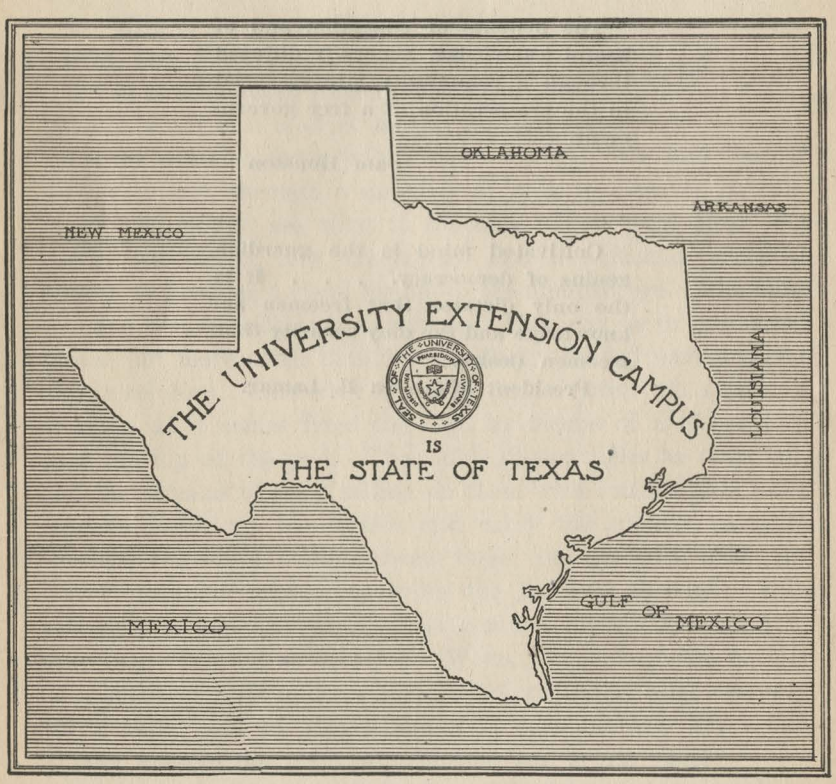
BABY HEALTH IS TEXAS' WEALTH



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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston

Cultivated mind is the guardian genius of democracy. . . . It is the only dictator that freemen acknowledge and the only security that freemen desire.

President Mirabeau B. Lamar.

Pure Milk and How to Get It

There is a world of wisdom in the saying, "Mother's milk for babies, and cow's milk for calves," but, unfortunately, it is necessary at times to feed infants on food other than mother's milk, and modified cow's milk is the best substitute. Moreover, all babies after a year of age, need for some time good, clean cow's milk for a large portion of their dietary. Hence it is necessary to study the problem of a pure milk supply for our babies.

Some of the reasons why we should study the milk problem are:

1. Milk is an opaque liquid, and hence conceals, to a marked degree, any impurity.
2. It is a splendid food for bacterial life.
3. A great deal of it is used in the raw state.

Let us examine these points more closely. We find that if we try to look through a quantity of milk to discover its condition, we cannot see what it contains. If it were clear like water, we would very frequently find a sufficient bacterial growth to produce a cloud visible to the unaided eye. The most common dirt in milk is cow manure. This may be in good-sized pieces, but more often it is in very finely divided particles and also in solution. One error in fairly common use is the straining of milk, as it comes from the cow, by means of a cheesecloth over the top of the pail. This holds the particles as they fall, and the streams of milk falling on them with considerable force tend to break up the masses and carry the smaller particles through the cloth. Aside from these, the streams wash the larger insoluble masses, carrying the bacteria through. Milk obtained in this way always has a much higher bacteria content than that not so handled. When you look at the bottom of a bottle of milk and see a sediment, remember that not only the greater part of this sediment is cow manure, but a far greater amount has gone into solution and is not visible.

After the bacteria get into the milk, they are in a medium that furnishes all the food they need or desire. Milk is one

of the best of our culture media, and in the laboratory is used very frequently for growing bacteria. The rate of multiplication under favorable conditions is extremely rapid, the average time required being between twenty and thirty minutes. Since each bacterium divides into two, and these continue to increase at the same rate, it can be readily seen that milk must be kept as free from bacteria as possible, especially when it is to be used as an article of diet for an infant.

The essentials for a pure milk are cleanliness, freshness, and low temperature. No milk can be pure unless it is produced in a cleanly manner, and the number of bacteria in milk is an index of the manner of production and handling.

The milk may be contaminated from disease of the cow, or from manure, dust, dirty containers, or dirty hands. It may also become contaminated by the act of coughing or sneezing over or near and in the direction of the container. Contamination from the human source is the most dangerous, as it is from this source that most of the disease-producing organisms come. No one should milk or handle the milk who has a sore throat or any sores on the hands. Above all, cleanliness in both the containers and in the dress and hands of the milkers should be secured.

Milk should be cooled as soon as possible after milking, and it should be kept at a temperature of not over 50 degrees Fahrenheit until used. The souring of milk is caused by the action of bacteria of a particular kind—the lactic acid bacteria. These act on the sugar in the milk, changing it to acid and water. When milk sours quickly, it is a sure sign either that it has not been kept cold or that it is not clean.

The examination of milk is of two kinds—chemical and bacteriological. These are for two distinct purposes. The chemical examination is made from an economic or administrative standpoint. Such an examination reveals the adulteration of milk, but it has, except when preservatives or gross adulteration are found, but little health significance.

The bacteriological examination, on the other hand, is largely for purposes of prevention of disease. This examination shows where inspection of the dairies is needed, and in this way saves

labor and much time for the inspector. The findings of the bacteriologist indicate if there is a failure on the part of the dairyman to keep his product in sanitary condition but they go no farther. The inspector, by following up the counts, can locate the cause of the high bacterial content. The milk inspector should co-operate with the dairyman in every way, and aid in locating any failure to produce clean milk.

The greater the co-operation between the producer, health department and consumer, the greater the chance of a clean milk supply.

The consumer has a vital interest in the character of the milk served to his community. How many consumers know from personal observation the conditions under which this important article of their food is produced? How many know if the cows producing the milk have passed the tuberculin test? How many know if the cows and the sheds are kept clean and free from flies? How many know if the milk utensils are cleaned and sterilized? How many have stopped to think that it costs more to produce a clean milk than a dirty one, and that as long as all milk commands the same price, there is no inducement to clean up? Can we expect a producer to expend the necessary money and care to give a clean supply when his neighbor with no expense and no care can get the same price for an inferior article? These are points to be considered, and the remedy is in the hands of the consumer.

After milk reaches the consumer, it should be properly cared for. Before opening a bottle of milk the outside of both the bottle and cap should be washed and wiped with a clean cloth or towel. After the cap has been removed, do not replace it, but cover the bottle with a clean, inverted glass or cup. This will be a convenient and clean cover.

Keep the milk on ice; do not return to the bottle any milk that has been poured out, but keep this in another receptacle. Milk readily takes up odors and flavors, consequently articles that can impart either odor or flavor—such as fish, onions, turnips, cantaloupes, etc., should not be kept near the milk.

Milk should not be allowed to stand exposed to warm weather between delivery and the time it is put on ice. Remember that

the milkman is responsible until he has delivered his product. The responsibility then rests on the consumer.

The cleanest possible milk should be used for infant feeding, and this should be pasteurized in the home. Pasteurization is not a substitute for cleanliness but an added safeguard. By pasteurization is meant the heating of milk to 140 degrees F., and holding it there for twenty minutes; but it is safer to add 5 to each process—i. e., 145 degrees and twenty-five minutes. The milk should then be cooled as rapidly as possible, and kept on ice until ready for use. In preparing the milk for the use of the baby, do not test the temperature by putting the mouth of the bottle or the nipple to the lips. A few drops on the wrist is a good indicator of the temperature.

A word in regard to commercially pasteurized milk may not be amiss. Much of the milk sold under this label has no right to be called pasteurized milk. No milk should be allowed to bear the label "Pasteurized Milk" if it has a count of over 50,000 bacteria per c. c.—about fifteen drops—after pasteurization, for either it has not been properly pasteurized or it has been kept too long after pasteurization before it is sold for use. As the disease-producing bacteria are derived almost entirely from human sources pasteurization is a means by which this danger can be reduced to a minimum, but it should never be used to cover up dirty methods of handling.

The question of a pure milk supply is a great one, and will never be solved until all the parties—producers, health departments, and consumers—understand each other and work together for the desired end, that end being a product pure and safe for human consumption.

A FEW RULES FOR PRODUCING PURE MILK

1. Cow must be healthy as shown by the tuberculin test and a physical examination by a veterinarian.
2. Cow must be clean-flanked and udder washed and wiped with a clean cloth.
3. No feeding should be done at or just previous to time of milking, as this causes dust.
4. Milker should wear clean clothes and have clean, dry hands.
5. Milking-stool must be clean as it is the last thing the milker touches before milking.
6. All milk utensils must be absolutely clean.
7. As soon as the milk is drawn from the cow it should be removed to the milk room and should be cooled as rapidly as possible.
8. It should then be kept at or below 50 degrees Fahrenheit until ready for use.

IN THE HOME

1. Milk should be put in the ice chest as soon as delivered.
2. There should be a compartment for the milk, as odor and flavors are quickly taken up by milk.
3. Always wash off the bottle and cap before opening, and do not return the cap, but invert a clean glass or cup over the bottle if there is a portion left.
4. Never return to the bottle any milk that has been poured out, as the milk will not keep as long. Keep this milk in another container.
5. Do not allow the bottle to be kept outside the ice chest while cooking. If milk is wanted pour out the needed amount and put the bottle back on ice.
6. Know where your milk comes from and how it is handled, and after you receive it give it proper care.